E01-SAA09FT06-030 SHEET 10 OF 16

SAA09FT06-030 QCT 1 0 1990

S040244 ATTACHMENT Page 25 of

CRITICAL ITEM: Pressure relief valve

Find Number: Al24449

System: Environmental Control Subsystem for the Payload Canister, Set 2

20 to 25

Ambient

Failure Category: 1S

SAA No.: 09FT06-030

NASA Part No.; 79K80161-2, superseded by 79K80451-2

PHN/Name: H70-1326

Drawing/

Anderson Greenwood, & Co. Part No.: 01d: 81JS68-6

Sheet No.: 79K15271, Sheet 5

New: 83JS68-6

Function: Relieves overpressure in GN2 ECS control panel. If line pressure exceeds 25

psig the excess pressure will be vented to atmosphere.

Critical Failure Mode: Fail open (FMN 09FT05-030.003)

Cause: Internal part failure

Failure Effect: Loss of smother mode capability. Loss of ability to contain a fire or payload hypergol leak. Possible loss of life or payload.

# ACCEPTANCE RATIONALE:

### Design:

Mfr's

o Materials: Body - type 316 stainless steel Seats - Teflon Spring - type 316/17-7PH stainless steel Internal parts - 300 series stainless steel

Actual

o Specifications: Rated Pressure (psig) Temperature (4F) 25 to 36 (max) -20 to +550

o Flow capacity: 63 C.F.M.
O Proof pressure: 1 1/2 times rated pressure

o Burst pressure: 4 times rated pressure

# Test:

o Manufacturer certifies proof, leak, and functional operation checks as specified in component specification 79K80161.

o Per File VI OMRSD requirements, operational checks will be made at validation test, semiannually, at component replacement, and prior to each critical operation as outlined in OMI E6401.

#### Inspection:

o Pressure gauge Al24427 in ECS control panel would indicate overpressurization of panel and failure of relief valve.

o Pressure gauge Al24427 is calibrated annually.

### Failure History:

There is no MDAC PRACA failure history in the critical mode. Data on Set 1 from 1981 to present; data on Set 2 from 1984 to present.

#### Operational Use:

Systems are secured and personnel are evacuated in accordance with OMI E5506 vertical) and OMI L5050 (horizontal), Appendix 2.